

TABLE C1A—MINIMUM SIMULATOR REQUIREMENTS—Continued

Entry No.	QPS requirements	Simulator levels			Information
	General simulator requirements	B	C	D	Notes
2.d.	The simulator must provide for manual and automatic testing of simulator hardware and software programming to determine compliance with simulator objective tests as prescribed in Attachment 2 of this appendix. An SOC is required		X	X	This may include an automated system, which could be used for conducting at least a portion of the QTG tests. Automatic “flagging” of out-of-tolerance situations is encouraged.
2.e.	The relative responses of the motion system, visual system, and flight deck instruments must be measured by latency tests or transport delay tests. Motion onset must occur before the end of the scan of that video field. Instrument response may not occur prior to motion onset. Test results must be within the following limits:				The intent is to verify that the simulator provides instrument, motion, and visual cues that are like the helicopter responses within the stated time delays. It is preferable motion onset occur before the start of the visual scene change (the start of the scan of the first video field containing different information). For helicopter response, acceleration in the appropriate corresponding rotational axis is preferred.
2.e.1.	Response must be within 150 milliseconds of the helicopter response.	X			
2.e.2.	Response must be within 100 milliseconds of the helicopter response.		X	X	
2.f.	The simulator must simulate brake and tire failure dynamics (including antiskid failure, if appropriate). An SOC is required.		X	X	The simulator should represent the motion (in the appropriate axes) and the directional control characteristics of the helicopter when experiencing simulated brake or tire failures.
2.g.	The aerodynamic modeling in the simulator must include: (1) Ground effect, (2) Effects of airframe and rotor icing (if applicable), (3) Aerodynamic interference effects between the rotor wake and fuselage, (4) Influence of the rotor on control and stabilization systems, (5) Representations of settling with power, and (6) Retreating blade stall. An SOC is required.		X	X	See Attachment 2 of this appendix for further information on ground effect.
2.h.	The simulator must provide for realistic mass properties, including gross weight, center of gravity, and moments of inertia as a function of payload and fuel loading. An SOC is required.	X	X	X	
3.	Equipment Operation				
3.a.	All relevant instrument indications involved in the simulation of the helicopter must automatically respond to control movement or external disturbances to the simulated helicopter; e.g., turbulence or windshear. Numerical values must be presented in the appropriate units.	X	X	X	
3.b.	Communications, navigation, caution, and warning equipment must be installed and operate within the tolerances applicable for the helicopter being simulated.	X	X	X	See Attachment 3 of this appendix for further information regarding long-range navigation equipment.
3.c.	Simulated helicopter systems must operate as the helicopter systems operate under normal, abnormal, and emergency operating conditions on the ground and in flight.	X	X	X	